

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 14 November 2000 (14.11.00)	
International application No. PCT/GB00/00805	Applicant's or agent's file reference P57668M
International filing date (day/month/year) 09 March 2000 (09.03.00)	Priority date (day/month/year) 09 March 1999 (09.03.99)
Applicant MILLS, Barrie et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
09 October 2000 (09.10.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia TEFY Telephone No.: (41-22) 338.83.38
---	---



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :

A61F 5/443

A1

(11) International Publication Number:

WO 00/53133

(43) International Publication Date: 14 September 2000 (14.09.00)

(21) International Application Number: PCT/GB00/00805

(22) International Filing Date: 9 March 2000 (09.03.00)

(30) Priority Data:

9905313.4 9 March 1999 (09.03.99) GB
9918085.3 2 August 1999 (02.08.99) GB

(71) Applicant (for all designated States except US): WELLAND
MEDICAL LIMITED [GB/GB]; 7 Brunel Centre, Newton
Road, Crawley, West Sussex RH10 2TU (GB);

(72) Inventors; and

(75) Inventors/Applicants (for US only): MILLS, Barrie [GB/GB];
24 Redstone Road, Redhill, Surrey RH1 6EA (GB); SMITH,
Rory, James, Maxwell [GB/GB]; High Dene, Hebden,
Skipton, North Yorkshire BD23 5EBY (GB).

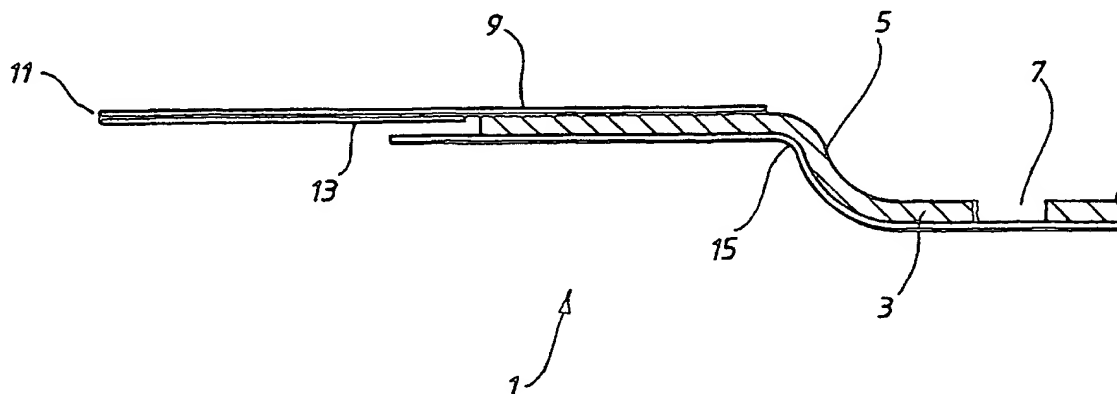
(74) Agents: HUTCHINS, Michael, Richard et al.; Fry Heath &
Spence, The Old College, 53 High Street, Horley, Surrey
RH6 7BN (GB).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG,
BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ,
EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE,
LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,
BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

(54) Title: ADHESIVE PADS FOR OSTOMY BAGS



(57) Abstract

The invention provides a deformable pad (1) for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material (3); the pad having an opening (7) for receiving stomal waste, the opening (7) being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

ADHESIVE PADS FOR OSTOMY BAGS

This invention relates to adhesive pads for ostomy bags, and more especially one-piece
5 and two-piece ostomy bags employing a convex body attachment surface.

Background of the Invention

Ostomy bags, such as urostomy, ileostomy and colostomy bags, are used to collect
bodily waste draining from a stomal opening in the patient's body wall. Ostomy bags can be
10 secured to the patient by means of a belt or strap, and/or adhesive, but more usually they are
affixed to the patient by means of an adhesive flange which surrounds the stomal orifice.

For many ostomy bag wearers, the stomal opening is sited in a recess in the body wall.
This may be a consequence of patient weight gain after intestinal surgery or the particular
15 surgery performed. In such cases it is preferable to use an ostomy bag appliance wherein the
body contacting surface is substantially convex in shape in order that the skin surrounding the
opening of the stoma is contacted and adhered to the adhesive surface of the appliance. Such
ostomy bag devices have become known as "convexity" appliances.

20 In the past, "convexity" appliances have created a number of problems. Commonly,
manufacture involves the use of injection moulded plastics to form a rigid and often inflexible
convex body attachment piece.

Unfortunately, such products are not only expensive to make but have led to a range of
25 patient complaints resulting from the pressure required to fix the device in place. These include
inter alia, skin damage, such as ulceration and bruising, and general discomfort. Not only are
such devices difficult to attach to the body wall so that the stomal orifice is aligned with the
opening in the ostomy bag, but they do not accommodate the full range of body movements, such
as reaching and bending, and therefore can lead to a loss of adhesion between the device and the
30 body or further physical discomfort. Furthermore, the rigid edge of the moulding in the region
of the orifice can damage the stoma.

A further problem with many known ostomy devices is that, as a consequence of their
relative rigidity, it is often necessary to apply paste to pack out the region behind the ostomy bag

so as to ensure an adequate seal between the ostomy bag flange and the skin surrounding the patient's stoma. When the ostomy bag is changed, it is then necessary to wash off the residual paste and applying fresh paste before fixing a new ostomy bag. Thus the procedures for applying ostomy bags, in many certain circumstances, are somewhat protracted and messy.

5

It has also been found that such devices are difficult to cut to suit the patient. Therefore, the manufacturer must supply a range of pre-cut devices to suit each patient.

Therefore, it is an object of the present invention to provide a convexity appliance which
10 is more comfortable, is easier to apply to the body wall and is simpler to manufacture.

Summary of the Invention

Accordingly, in one aspect, the invention provides a deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded
15 to an adhesive material; the pad having an opening for receiving stomal waste, the opening being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad.

The term "unreinforced" as used herein means that there is no reinforcing element which affords greater stiffness to the convex formation. In this respect, the adhesive pad is
20 distinguished from known ostomy bag-securing pads making use of the "convexity" principle in which a stiffening element, for example formed of a stiff injection-moulded plastics material, is used to reinforce the region around the stomal opening and to form the convex shape. The term "unreinforced" also distinguishes the adhesive pads of the invention from the ostomy devices shown in US-A-5730736, US-A-4867748 and EP-A-0756854 in which the adhesive pads
25 are reinforced by thickening of the adhesive layer in the region of the stomal orifices.

Thus, the convex formation is hollow, a concave cavity or frustoconical depression being present on the surface of the pad opposite to the bodyside surface, beneath the convex formation.

30 In another aspect, the invention provides a deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material; the pad having an opening for receiving stomal waste, the opening being surrounded by a hollow frustoconical ring extending outwardly from a bodyside face of the pad.

By avoiding the use of a separate, stiff reinforcing plastics component, or reinforcement by thickened regions of adhesive, the pad has the advantage that it can be easily manipulated when the patient applies the device to the stomal orifice. Furthermore, there are no stiff and unyielding edges which can cause discomfort, or lead to the dislodgement of the device, as the patient bends and turns.

The bodyside surface of the deformable pad may be covered or coverable with a release liner which may be made of a moulded plastics film. The release liner preferably conforms to the shape of the bodyside surface of the pad. The liner may be pre-formed e.g. by vacuum forming, but more preferably it is vacuum formed as a laminate together with the adhesive layer. The liner may be made from styrene, polyethylene, or PVC, e.g. high density or medium density. The liner can be coated with a silicone on one or both sides.

The convex formation or frustoconical ring can be formed by deforming a combination of a layer of plastics film and adhesive material and optionally a release liner layer in or on a suitably shaped mould. For example the layers can be moulded by thermo-forming in a one or two stage process. In the two stage process the layers are initially cold-formed to form the required shape and then thermally treated to bond the layers together. In this embodiment, a concave cavity or frustoconical depression is formed on the surface of the pad opposite to the bodyside surface.

Alternatively, and more preferably, the convex formation or frustoconical ring can be formed by preparing a laminate comprising the layer of plastics film or a precursor thereof, the adhesive material, and a release liner as hereinbefore defined, and vacuum forming the laminate on a vacuum forming mould to provide the convex formation or frustoconical ring.

An advantage of forming a laminate comprising the release liner and then deforming the laminate is that the liner remains in intimate contact with the adhesive throughout the deforming process, and subsequently during storage. This prevents the formation of air bubbles or air pockets between the release liner and the adhesive, a problem inherent in many prior art adhesive pads, and which can cause drying out and loss of adhesive properties of the adhesive material.

Preferably, the adhesive material comprises a hydrocolloid composition or a hydrogel

adhesive. The hydrogel adhesive may be an adhesive water-swellable polymer. Preferably, the hydrogel adhesive is formed of polymeric materials which are cross-linked, either physically or chemically, for example,

- 5 cross-linked polyacrylamide gels, polymers containing cross-linked polymer chains derived from styrene, isoprene, cyclopentadiene and dioctyl adipate monomers, or polyhydroxyethylmethacrylic acids.

The hydrocolloid composition may comprise gel-forming natural and modified
10 polysaccharides in combination with polymers based on styrene, isoprene or isobutylene.

The plastics film is typically a thin film which is preferably less than 0.2mm in thickness. Typically, the film comprises polyethylene. The film may be formed by heat treatment of a layer of woven or non-woven material, e.g. non-woven polyethylene.

15

The deformable pad may be of any shape suitable for use in a stomal appliance context. For example, the pad may take the form of a circular annulus or an oval shape.

The deformable pad may be of generally uniform thickness. Alternatively, the pad may
20 vary in thickness across its width, for example, it may decrease in thickness in a radially outward direction.

The adhesive material may have incorporated therein a reinforcing fabric such as a woven, knitted, or non-woven fabric.

25

In one embodiment, the side of the deformable pad opposite to the bodyside surface may be bonded to a backing layer which may be formed of a water-vapour permeable material, e.g. non-woven or spun-bonded material comprising polyethylene. The backing layer may extend radially beyond the adhesive material, and may be provided with an adhesive to enable it in use,
30 to adhere to and form a seal against the skin of a patient radially outwardly of the deformable pad.

The adhesive may extend around the periphery of the backing layer and/or be interposed between the deformable pad and the backing layer to bond the adhesive material thereto.

Preferably, the adhesive is a hypoallergenic adhesive which does not cause undue skin irritation.

The backing layer typically may be secured to an ostomy appliance such as an ostomy bag by, for example, adhesive bonding or welding, e.g. rf welding.

In yet another aspect, the invention provides an ostomy bag comprising a deformable pad for removably securing the bag to the skin of a patient about a stomal orifice, the deformable pad being as defined hereinabove.

The ostomy device may be either a one-piece or two-piece ostomy device. The two-piece ostomy device may comprise a two-part coupling having bodyside and bagside elements, the deformable pad being bonded to the bodyside element.

In still a further aspect, the invention provides a method for producing a deformable pad, as hereinbefore defined, for removably securing an ostomy bag to the skin of a patient, the method comprising the steps of:-

- (a) providing a layer of thin plastics film, or a precursor thereof, and a layer of adhesive material;
- (b) shaping the layers of material into the required configuration; and,
- (c) bonding the layers together, when they have not already been bonded.

The term "film" is used herein to denote a thin layer of material consisting of a coherent layer or fused mesh. The term "a precursor thereof" is used herein to denote a material which can be used to form a film, for example a woven or non-woven material which on heating forms a film.

The layers can be shaped and bonded together simultaneously, for example, by thermo-forming or vacuum-forming the layers. When bonded together, the film provides a support for the adhesive material.

In one embodiment, the layers are shaped and bonded with a release liner. The release liner thus conforms to the shape of the pad and protects the adhesive surface of the pad. The release liner can be pre-formed.

More preferably however, the film (or precursor thereof) and adhesive material and optionally the release liner can be laminated together before shaping.

As indicated above, the shaping of the laminate is preferably effected using vacuum forming on a suitable vacuum forming mould or machine. By vacuum forming a pre-formed laminate comprising the release liner, the problem of air bubbles being created between the release liner and the adhesive, and the consequent problem of the drying out of the adhesive, is substantially avoided.

10 Brief Description of the Drawings

The invention will now be described by way of example only by reference to the accompanying diagrammatic drawings in which:-

Figure 1 shows a partial side elevation of a deformable pad according to the invention;

Figure 2 shows an exploded view of thermo-forming apparatus suitable for carrying out the method of the present invention.

Figure 3 is a schematic side view illustrating the arrangement of the layers in a deformable pad according to a second aspect of the invention; and

Figure 4 illustrates schematically the vacuum forming of the adhesive pad of Figure 3.

20 Detailed Description of the Preferred Embodiments

Referring now to Figure 1, a deformable pad 1 according to the invention can comprise an adhesive pad 3, having a convex formation 5, for example, formed of a thin plastics layer such as non-woven polyethylene, bonded to the bagside surface of a layer of hydrocolloid adhesive material such as a polyisobutylene containing modified polysaccharides. The adhesive pad is provided with a generally central aperture 7 through which the stoma of the patient may protrude. Overlying the adhesive pad 3 is a backing layer 9 formed of polyethylene non-woven material.

Extending around the periphery of the backing layer 9 is a layer of adhesive 11, for example formed from an emulsion acrylic adhesive. As can be seen from the Figure, the backing layer 9 is provided with a portion 13 which extends radially beyond the adhesive pad.

The bodyside surface of the adhesive material is temporarily covered and protected by the use of a release liner 15 made of a moulded plastics film (e.g. polyethylene terephthalate

(PET)) which can be removed immediately prior to use of the adhesive pad.

The surface of the backing layer which is opposite to the bodyside surface of the pad is typically bonded to an ostomy appliance such as an ostomy bag, for example by means of
5 adhesive or by welding. For the purposes of clarity, the ostomy bag is not illustrated.

In use, the adhesive pad, with or without the ostomy appliance attached, is affixed to the skin of the patient about the stomal opening, the hydrocolloid adhesive serving to efficiently adhere the convex formation and the remainder of the pad to the skin of the patient. Portions of
10 the backing layer 9 form a seal against the skin by virtue of adhesive.

In this example, the deformable pad was produced using a heat and pressure die. Referring now to Figure 2, a layer of thin plastics film, in this example, a layer of non-woven polyethylene, is placed adjacent to a layer of hydrocolloid adhesive material. The hydrocolloid
15 adhesive layer is placed on a release liner which is made of pre-formed, silicone-coated, PET. The three layers 17 are positioned on the receiving surface of a shaped, in this case, concave, surface of one half 19 of a moulding die in a hydraulic press such that the release liner is in contact with the surface of the die. The surfaces of the die are maintained at a temperature of 150°C. The hydraulic press brings the two halves (19, 21) of the moulding die together such that
20 they exert a pressure of 2 bar on the layers which are thus bonded and shaped together. The heat and the pressure fuse the non-woven polyethylene material to form a shaped film which is bonded to the hydrocolloid adhesive material to give it form.

Typically, the moulding die exerts a pressure from about 1 to 3 bar on the layers which
25 form the pad. Preferably, the tooling is maintained at a temperature of between about 100°C and 200°C. The exact pressure and temperature required depends on the materials chosen to form the deformable pad.

Figures 3, 4 and 4a illustrate an alternative embodiment of the invention. In this
30 embodiment, the deformable pad 101 comprises a release liner layer 115, an adhesive layer 111 and a backing layer 109, the release layer, adhesive pad and backing layer being formed from the same materials as described above in relation to Figure 1. By way of example, the release liner 115 can be from about 80 microns to 180 microns thick, the hydrocolloid adhesive layer 111 can be from 0.9 mm to 1.2 mm thick, and the non-woven layer backing layer 109 can be

approximately 0.2 to 0.6 mm thick, more preferably 0.3 mm thick.

The three layers are initially laminated together using an extrusion and laminating line and are then cut to the desired shape. Typically the blank thus formed is of a generally circular shape, but with one or more part-circular tab portions being provided around the periphery of the circle to facilitate fixing and removal of the adhesive pad to and from the patient. The release liner typically is formed with a hole at the centre thereof, although it need not be.

The planar laminate blank is then placed on a vacuum forming machine, the moulding tool having a convex form as shown in Figures 4a and 4b. A means of heating, such as a radiant heater, is positioned above the laminating machine in order to soften the laminate, and the laminate is then subjected to vacuum forming for a period of, for example, five to seven seconds. The convexly formed laminate can then be removed from the mould as shown in Figure 4b and secured to an ostomy bag in accordance with methods known per se.

15

A major advantage of the adhesive pad formed in accordance with the vacuum forming method as described above is that it prevents the formation of air bubbles or air pockets between the release liner and the adhesive layer, a problem which afflicts many known adhesive pads. Consequently, the adhesive pad of the invention does not suffer from the problems of excessive drying out, and the consequent loss of adhesive properties, experienced with many known ostomy pads.

20

It will be understood that the foregoing is merely exemplary of an embodiment of the invention and that modification may be made without departing from the true scope of the invention as defined in the accompanying claims.

25

CLAIMS

1. A deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material; the pad having
5 an opening for receiving stomal waste, the opening being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad.
2. A deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material; the pad having
10 an opening for receiving stomal waste, the opening being surrounded by hollow frustoconical ring extending outwardly from a bodyside face of the pad.
3. A deformable pad as claimed in any one of the preceding claims wherein the adhesive material comprises a hydrocolloid composition or a hydrogel adhesive.
15
4. A deformable pad as claimed in claim 3 wherein the adhesive material comprises a hydrogel adhesive wherein the hydrogel adhesive comprises an adhesive water-swella-
ble polymer.
- 20 5. A deformable pad as claimed in claim 4 wherein the hydrogel adhesive is formed of polymeric materials which are cross-linked, either physically or chemically, for example, cross-linked polyacrylamide gels, polymers containing cross-linked polymer chains derived from styrene, isoprene, cyclopentadiene and dioctyl adipate monomers, or polyhydroxyethylmethacrylic acids.
25
6. A deformable pad as claimed in claim 5 wherein the adhesive material comprises a hydrocolloid composition wherein the hydrocolloid composition comprises gel-forming natural and modified polysaccharides in combination with polymers based on styrene, isoprene or isobutylene.
30
7. A deformable pad as claimed in any one of the preceding claims wherein the plastics film is less than 0.2mm in thickness.
8. A deformable pad as claimed in any one of the preceding claims wherein the plastics

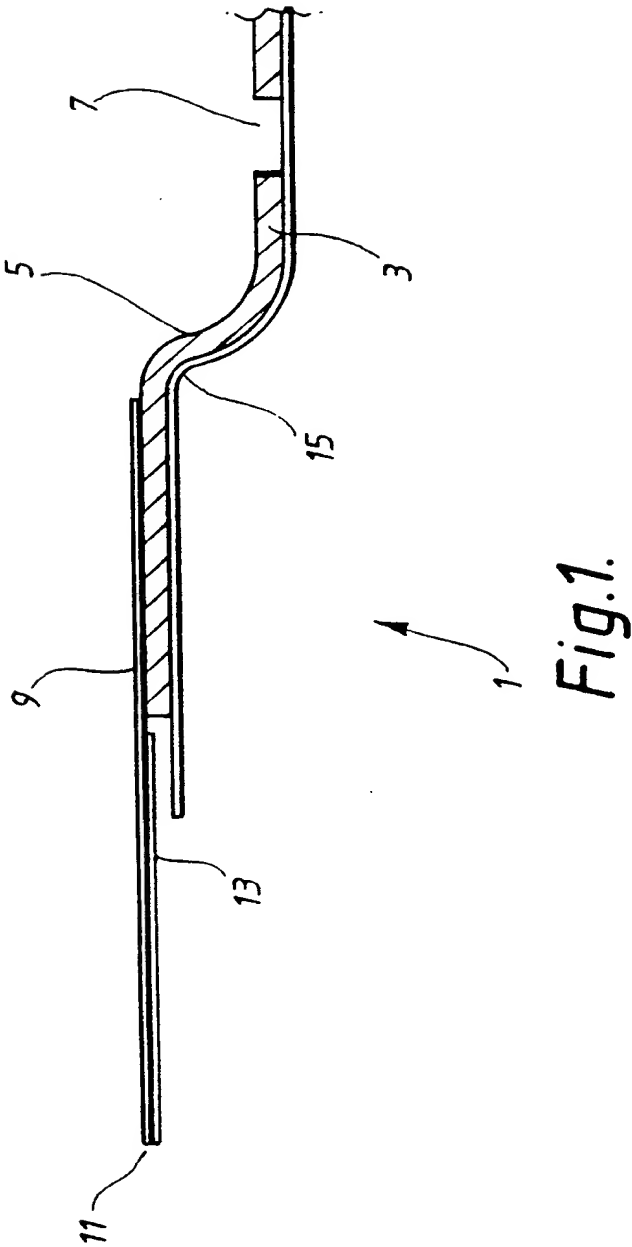
film is a woven or non-woven plastics material such as non-woven polyethylene.

9. A deformable pad as claimed in any one of the preceding claims which is of generally uniform thickness.
- 5 10. A deformable pad as claimed in any one of the preceding claims wherein the adhesive material has incorporated therein a fabric such as a woven, knitted, or non-woven fabric.
- 10 11. A deformable pad as claimed in any one of the preceding claims wherein the side of the deformable pad opposite to the bodyside surface is bonded to a backing layer.
12. A deformable pad as claimed in claim 11 wherein the backing layer is formed of a water-vapour permeable material.
- 15 13. A deformable pad as claimed in claim 12 wherein the backing layer is formed of a non-woven or spun-bonded material comprising polyethylene.
14. A deformable pad as claimed in any one of claims 11 to 13 wherein the backing layer extends radially beyond the adhesive material.
- 20 15. A deformable pad as claimed in claim 14 wherein the backing layer is provided with an adhesive to enable it in use, to adhere to and form a seal against the skin of a patient radially outwardly of the deformable pad.
- 25 16. A deformable pad as claimed in claim 15 wherein the adhesive extends around the periphery of the backing layer and/or is interposed between the deformable pad and the backing layer to bond the adhesive material thereto.
- 30 17. A deformable pad as claimed in any one of claims 11 to 16 wherein the backing layer is secured to an ostomy appliance such as an ostomy bag.
18. A deformable pad as claimed in claim 17 wherein the ostomy bag is secured by adhesive bonding or welding, e.g. rf welding.

19. A deformable pad as claimed in any one of the preceding claims wherein the bodyside surface of the adhesive material is covered or coverable with a release liner.
20. A deformable pad as claimed in claim 19 wherein the release liner is made of a moulded plastics film, such as styrene, polyethylene, a polyester such as PET or PVC, e.g high density or medium density PVC.
21. A deformable pad as claimed in claim 19 or claim 20 wherein the liner is coated with a silicone on one or both sides.
22. A deformable pad as claimed in any one of claims 20 to 21 wherein the release liner conforms to the shape of the bodyside surface of the adhesive material.
23. A deformable pad as claimed in claim 22 wherein the release liner is pre-formed e.g. by vacuum forming.
24. A deformable pad according to claim 23 wherein the release liner is formed, eg by vacuum forming, together with the plastics film and the adhesive layer.
25. A deformable pad for removably securing an ostomy bag to the skin of a patient, the deformable pad comprising a plastics film bonded to an adhesive material; the adhesive material being covered by a release layer, the deformable pad having means defining an opening for receiving stomal waste, the means defining said opening being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad; the deformable pad having been formed by moulding (eg by vacuuming forming) a laminate comprising the plastics film, adhesive material and release liner.
26. A deformable pad substantially as defined herein and with reference to the accompanying drawings.
27. An ostomy bag comprising a deformable pad for removably securing the bag to the skin of a patient about a stomal opening, the deformable pad being as claimed in any one of claims 1 to 26.

28. An ostomy bag as claimed in claim 27 which is either a one-piece or two-piece ostomy bag.
29. An ostomy bag as claimed in claim 28 which is a two piece ostomy bag and wherein the two-piece ostomy bag comprises a two-part coupling having bodyside and bagside elements, the deformable pad being bonded to the bodyside element.
30. An ostomy bag substantially as defined hereinabove in claims 26 to 28 and with reference to the accompanying drawings.
31. A method for producing a deformable pad, as claimed in any one of claims 1 to 28, for removably securing an ostomy bag to the skin of a patient, the method comprising the steps of:-
- (a) providing a layer of plastics film, or a precursor thereof, and a layer of adhesive material;
 - (b) shaping the layers of material into the required configuration; and,
 - (c) bonding the layers together, where they have not already been thus bonded.
32. A method for producing a deformable pad as claimed in claim 31 wherein the precursor of the plastics film is a woven or non-woven material which forms a film on heating.
33. A method for producing a deformable pad as claimed in claim 31 or claim 32 wherein the layers are shaped and bonded together simultaneously.
34. A method for producing a deformable pad as claimed in any one of claims 31 to 33 wherein the layers are shaped and bonded by thermo-forming or vacuum-forming the layers.
35. A method for producing a deformable pad as claimed in any one of claims 31 to 34 wherein the layers are shaped and bonded with a release liner.
36. A method for producing a deformable pad as claimed in claim 35 wherein the release liner is pre-formed.

37. A method for producing a deformable pad as claimed in any one of claim 31 to 36 wherein the convex formation or frustoconical ring is formed by deforming a combination of a layer of thin plastics film and adhesive material in a suitably shaped mould.
- 5
38. A method for producing a deformable pad as claimed in claim 37 wherein the layers are moulded by thermo-forming in a one or two stage process.
39. A method for producing a deformable pad as claimed in claim 38 wherein the layers are
- 10 moulded by thermo-forming in a two-stage process wherein the layers are initially cold-formed to form the required shape and then thermally treated to bond the layers together.
40. A method for producing a deformable pad as defined in any one of claims of 1 to 26, the method comprising vacuum forming a laminate of the plastics film, adhesive material
- 15 and a release liner.
41. A method for producing a deformable pad substantially as defined hereinabove in claims 33 to 41 and with reference to the accompanying drawings.



2/3

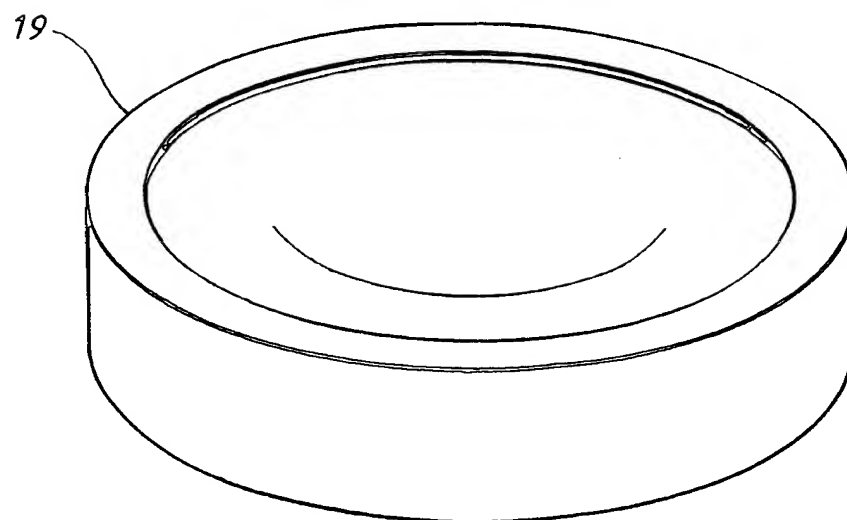
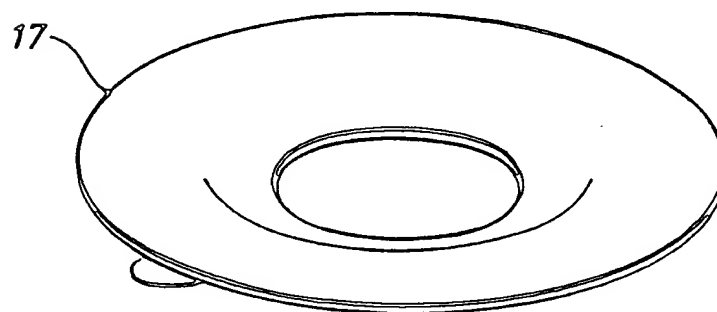
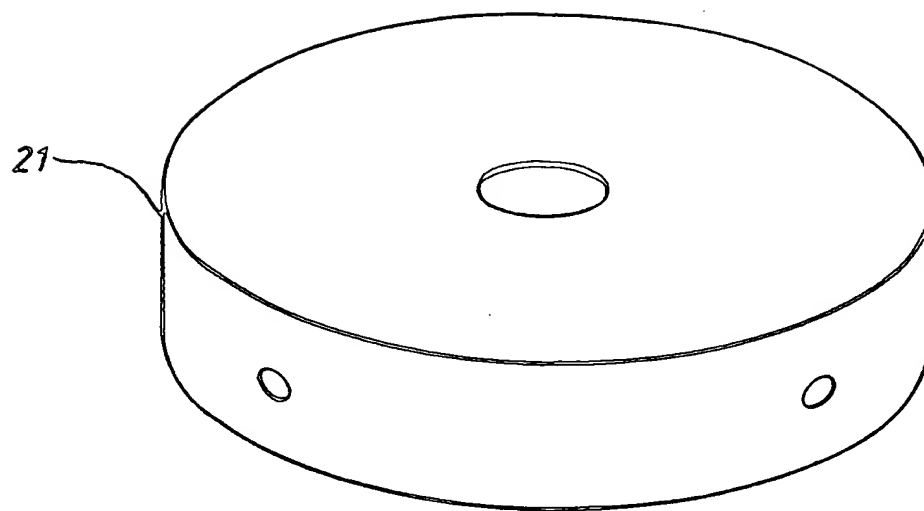


Fig.2.

3 / 3

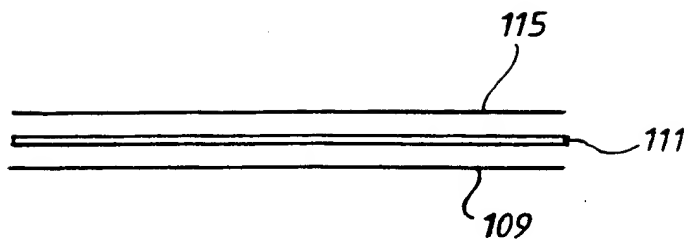


Fig. 3.

VACUUM FORMING

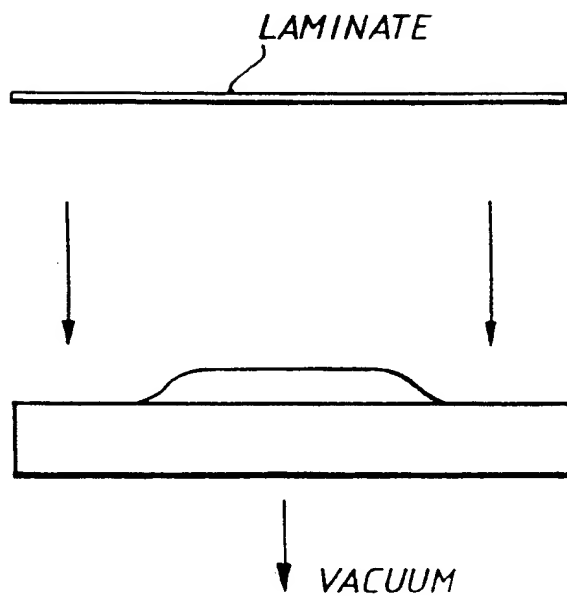


Fig. 4a.

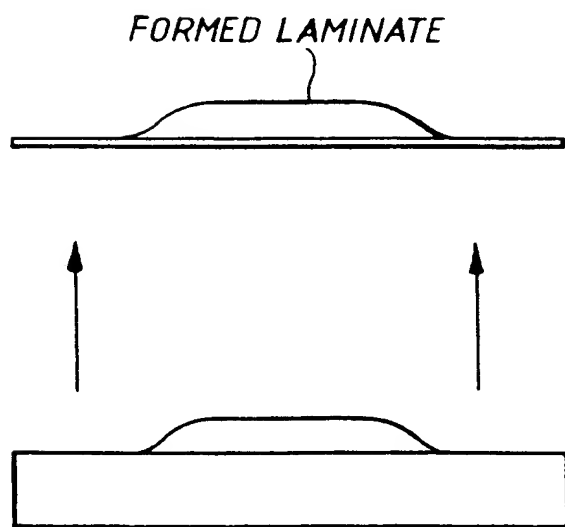


Fig. 4b.

INTERNATIONAL SEARCH REPORT

International Application No

PC 00/00805

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61F5/443

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 756 854 A (HOLLISTER INC) 5 February 1997 (1997-02-05) cited in the application abstract ----	1,25,31
A	EP 0 228 191 A (MARLEN MFG DEV) 8 July 1987 (1987-07-08) page 5, line 9 -page 6, line 9; figures ----	1,25
A	US 4 867 748 A (SAMUELSEN PETER) 19 September 1989 (1989-09-19) cited in the application abstract; figures ----	1,25
A	US 5 730 736 A (SAWERS MICHAEL F ET AL) 24 March 1998 (1998-03-24) cited in the application -----	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

21 June 2000

Date of mailing of the international search report

29/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Sánchez y Sánchez, J

INTERNATIONAL SEARCH REPORT

information on patent family members

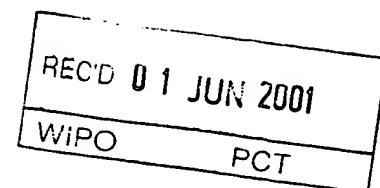
International Application No

PCT/GB 00/00805

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0756854	A	05-02-1997	US 5609585	11-03-1997
			CA 2180166	02-02-1997
			DE 69602402	17-06-1999
			DE 69602402	09-09-1999
			JP 9154866	17-06-1997
			US 5716475	10-02-1998
EP 0228191	A	08-07-1987	AT 49872	15-02-1990
			DE 3668551	08-03-1990
			GR 3000461	28-06-1991
			JP 2057121	23-05-1996
			JP 7087859	27-09-1995
			JP 62159660	15-07-1987
US 4867748	A	19-09-1989	US 5000748	19-03-1991
			DK 497686	18-04-1988
			DE 3783427	18-02-1993
			DE 3783427	30-05-1996
			EP 0264299	20-04-1988
US 5730736	A	24-03-1998	ES 2037726	01-07-1993
			US 5811116	22-09-1998
			CA 2215175	26-03-1998
			DE 832626	06-04-2000
			EP 0832626	01-04-1998
			US 5834009	10-11-1998
			CA 2201949	30-10-1997
			EP 0806210	12-11-1997

PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference P57668M	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/00805	International filing date (<i>day/month/year</i>) 09/03/2000	Priority date (<i>day/month/year</i>) 09/03/1999
International Patent Classification (IPC) or national classification and IPC A61F5/443		
Applicant WELLAND MEDICAL LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such-statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 09/10/2000	Date of completion of this report 30.05.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer De Meyere, P Telephone No. +49 89 2399 7466



INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

International application No. PCT/GB00/00805

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-8 as originally filed

Claims, No.:

1-37 with telefax of 22/02/2001

Drawings, sheets:

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing: ◊

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00805

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-37
	No: Claims
Inventive step (IS)	Yes: Claims 1-37
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-37
	No: Claims

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

1. Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1: US-A-4 867 748 (SAMUELSEN PETER) 19 September 1989 (1989-09-19)
cited in the application

The structural differences between the pad of D1 and the subject-matter of claim 1 is described in the second part of claim 1.

These differences allow easier manipulation by the patient.

These structural differences are not foreseen by the cited documents.

3. Re Item VIII

Certain observations on the international application

3.1. In claims 4, 17, 19, 22, 23 and 24 the expressions "for example", "e.g.", and "such as", have no limiting effect on the scope of these claims. The features following such expressions are entirely optional (Article 6 PCT).

3.2. In claim 28 the wording of "into the required configuration" does not contain any technical characteristics and should be substituted to define the configuration technically or this expression should be deleted (Article 6 PCT).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P57668M	FOR FURTHER ACTION		see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/GB 00/ 00805	International filing date (day/month/year) 09/03/2000	(Earliest) Priority Date (day/month/year) 09/03/1999	
Applicant WELLAND MEDICAL LIMITED et al.			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

P GB 00/00805

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61F5/443

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 756 854 A (HOLLISTER INC) 5 February 1997 (1997-02-05) cited in the application abstract ---	1,25,31
A	EP 0 228 191 A (MARLEN MFG DEV) 8 July 1987 (1987-07-08) page 5, line 9 -page 6, line 9; figures ---	1,25
A	US 4 867 748 A (SAMUELSEN PETER) 19 September 1989 (1989-09-19) cited in the application abstract; figures ---	1,25
A	US 5 730 736 A (SAWERS MICHAEL F ET AL) 24 March 1998 (1998-03-24) cited in the application -----	

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

21 June 2000

Date of mailing of the international search report

29/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Sánchez y Sánchez, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/00805

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0756854	A	05-02-1997	US 5609585 A	11-03-1997
			CA 2180166 A	02-02-1997
			DE 69602402 D	17-06-1999
			DE 69602402 T	09-09-1999
			JP 9154866 A	17-06-1997
			US 5716475 A	10-02-1998
EP 0228191	A	08-07-1987	AT 49872 T	15-02-1990
			DE 3668551 D	08-03-1990
			GR 3000461 T	28-06-1991
			JP 2057121 C	23-05-1996
			JP 7087859 B	27-09-1995
			JP 62159660 A	15-07-1987
			US 5000748 A	19-03-1991
US 4867748	A	19-09-1989	DK 497686 A	18-04-1988
			DE 3783427 A	18-02-1993
			DE 3783427 T	30-05-1996
			EP 0264299 A	20-04-1988
			ES 2037726 T	01-07-1993
US 5730736	A	24-03-1998	US 5811116 A	22-09-1998
			CA 2215175 A	26-03-1998
			DE 832626 T	06-04-2000
			EP 0832626 A	01-04-1998
			US 5834009 A	10-11-1998
			CA 2201949 A	30-10-1997
			EP 0806210 A	12-11-1997

REPLACED BY
ART 34 ADUTCLAIMS

1. A deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material; the pad having
5 an opening for receiving stomal waste, the opening being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad.
2. A deformable pad for removably securing an ostomy bag to the skin of a patient consisting essentially of a plastics film bonded to an adhesive material; the pad having
10 an opening for receiving stomal waste, the opening being surrounded by hollow frustoconical ring extending outwardly from a bodyside face of the pad.
3. A deformable pad as claimed in any one of the preceding claims wherein the adhesive material comprises a hydrocolloid composition or a hydrogel adhesive.
15
4. A deformable pad as claimed in claim 3 wherein the adhesive material comprises a hydrogel adhesive wherein the hydrogel adhesive comprises an adhesive water-swella-
ble polymer.
- 20 5. A deformable pad as claimed in claim 4 wherein the hydrogel adhesive is formed of polymeric materials which are cross-linked, either physically or chemically, for example, cross-linked polyacrylamide gels, polymers containing cross-linked polymer chains derived from styrene, isoprene, cyclopentadiene and dioctyl adipate monomers, or polyhydroxyethylmethacrylic acids.
25
6. A deformable pad as claimed in claim 5 wherein the adhesive material comprises a hydrocolloid composition wherein the hydrocolloid composition comprises gel-forming natural and modified polysaccharides in combination with polymers based on styrene, isoprene or isobutylene.
30
7. A deformable pad as claimed in any one of the preceding claims wherein the plastics film is less than 0.2mm in thickness.
8. A deformable pad as claimed in any one of the preceding claims wherein the plastics

film is a woven or non-woven plastics material such as non-woven polyethylene.

9. A deformable pad as claimed in any one of the preceding claims which is of generally uniform thickness.
- 5 10. A deformable pad as claimed in any one of the preceding claims wherein the adhesive material has incorporated therein a fabric such as a woven, knitted, or non-woven fabric.
- 10 11. A deformable pad as claimed in any one of the preceding claims wherein the side of the deformable pad opposite to the bodyside surface is bonded to a backing layer.
12. A deformable pad as claimed in claim 11 wherein the backing layer is formed of a water-vapour permeable material.
- 15 13. A deformable pad as claimed in claim 12 wherein the backing layer is formed of a non-woven or spun-bonded material comprising polyethylene.
14. A deformable pad as claimed in any one of claims 11 to 13 wherein the backing layer extends radially beyond the adhesive material.
- 20 15. A deformable pad as claimed in claim 14 wherein the backing layer is provided with an adhesive to enable it in use, to adhere to and form a seal against the skin of a patient radially outwardly of the deformable pad.
- 25 16. A deformable pad as claimed in claim 15 wherein the adhesive extends around the periphery of the backing layer and/or is interposed between the deformable pad and the backing layer to bond the adhesive material thereto.
- 30 17. A deformable pad as claimed in any one of claims 11 to 16 wherein the backing layer is secured to an ostomy appliance such as an ostomy bag.
18. A deformable pad as claimed in claim 17 wherein the ostomy bag is secured by adhesive bonding or welding, e.g. rf welding.

19. A deformable pad as claimed in any one of the preceding claims wherein the bodyside surface of the adhesive material is covered or coverable with a release liner.
20. A deformable pad as claimed in claim 19 wherein the release liner is made of a moulded plastics film, such as styrene, polyethylene, a polyester such as PET or PVC, e.g high density or medium density PVC.
21. A deformable pad as claimed in claim 19 or claim 20 wherein the liner is coated with a silicone on one or both sides.
22. A deformable pad as claimed in any one of claims 20 to 21 wherein the release liner conforms to the shape of the bodyside surface of the adhesive material.
23. A deformable pad as claimed in claim 22 wherein the release liner is pre-formed e.g. by vacuum forming.
24. A deformable pad according to claim 23 wherein the release liner is formed, eg by vacuum forming, together with the plastics film and the adhesive layer.
25. A deformable pad for removably securing an ostomy bag to the skin of a patient, the deformable pad comprising a plastics film bonded to an adhesive material; the adhesive material being covered by a release layer, the deformable pad having means defining an opening for receiving stomal waste, the means defining said opening being surrounded by a pliable unreinforced convex formation on a bodyside face of the pad; the deformable pad having been formed by moulding (eg by vacuuming forming) a laminate comprising the plastics film, adhesive material and release liner.
26. A deformable pad substantially as defined herein and with reference to the accompanying drawings.
27. An ostomy bag comprising a deformable pad for removably securing the bag to the skin of a patient about a stomal opening, the deformable pad being as claimed in any one of claims 1 to 26.

28. An ostomy bag as claimed in claim 27 which is either a one-piece or two-piece ostomy bag.
29. An ostomy bag as claimed in claim 28 which is a two piece ostomy bag and wherein the two-piece ostomy bag comprises a two-part coupling having bodyside and bagside elements, the deformable pad being bonded to the bodyside element.
30. An ostomy bag substantially as defined hereinabove in claims 26 to 28 and with reference to the accompanying drawings.
31. A method for producing a deformable pad, as claimed in any one of claims 1 to 28, for removably securing an ostomy bag to the skin of a patient, the method comprising the steps of:-
- (a) providing a layer of plastics film, or a precursor thereof, and a layer of adhesive material;
 - (b) shaping the layers of material into the required configuration; and,
 - (c) bonding the layers together, where they have not already been thus bonded.
32. A method for producing a deformable pad as claimed in claim 31 wherein the precursor of the plastics film is a woven or non-woven material which forms a film on heating.
33. A method for producing a deformable pad as claimed in claim 31 or claim 32 wherein the layers are shaped and bonded together simultaneously.
34. A method for producing a deformable pad as claimed in any one of claims 31 to 33 wherein the layers are shaped and bonded by thermo-forming or vacuum-forming the layers.
35. A method for producing a deformable pad as claimed in any one of claims 31 to 34 wherein the layers are shaped and bonded with a release liner.
36. A method for producing a deformable pad as claimed in claim 35 wherein the release liner is pre-formed.

37. A method for producing a deformable pad as claimed in any one of claim 31 to 36 wherein the convex formation or frustoconical ring is formed by deforming a combination of a layer of thin plastics film and adhesive material in a suitably shaped mould.

5

38. A method for producing a deformable pad as claimed in claim 37 wherein the layers are moulded by thermo-forming in a one or two stage process.

10

39. A method for producing a deformable pad as claimed in claim 38 wherein the layers are moulded by thermo-forming in a two-stage process wherein the layers are initially cold-formed to form the required shape and then thermally treated to bond the layers together.

15

40. A method for producing a deformable pad as defined in any one of claims of 1 to 26, the method comprising vacuum forming a laminate of the plastics film, adhesive material and a release liner.

41. A method for producing a deformable pad substantially as defined hereinabove in claims 33 to 41 and with reference to the accompanying drawings.